

MAP4C- Linear, Quadratic and Exponential Equations

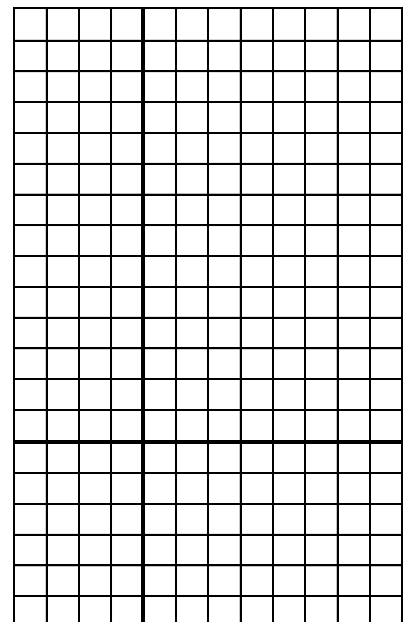
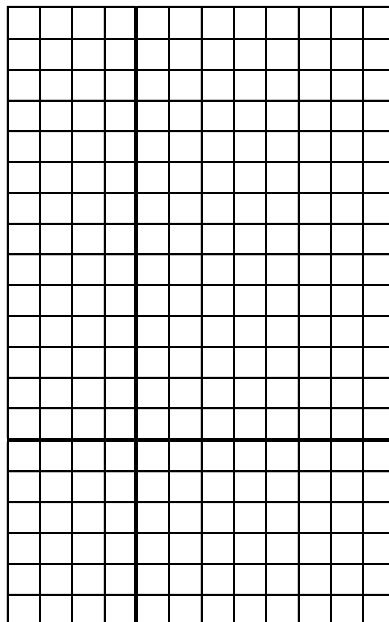
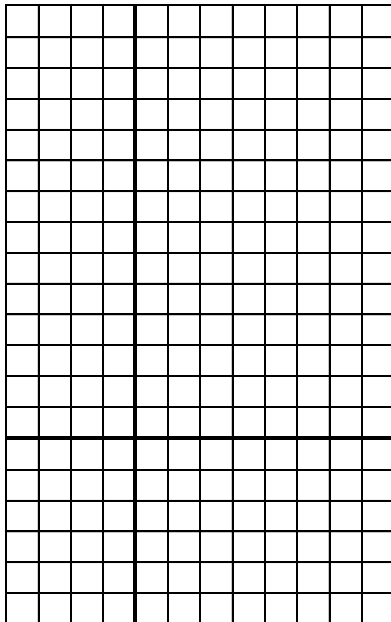
Write (L) Linear, (Q) Quadratic or (E) Exponential beside the equation to show what type it is.

- $y=5x-2$ _____
 - $y=-4x^1-6$ _____
 - $y=2(x-3)^2+6$ _____
 - $y=x^2+6x+2$ _____
 - $y=8-9^x$ _____
 - $3y+2x+4=0$ _____
 - $y=3^x$ _____
 - $y=0.5^{2x}$ _____
 - $y=-12+(-5x)$ _____
 - $y=(x-6)(x+9)$ _____
 - $y=10^{x-1}$ _____
 - $y=-x+x^2$ _____
 - $y=x^2+9$ _____

2. Complete the following tables

Linear			Quadratic				Exponential		
$y = 3x - 4$			$y = 2(x-3)^2 + 1$				$y = \left(\frac{1}{2}\right)^x$		
x		1st difference	x		1st difference	2nd difference	x		ratio
-3	-13		-3	73			-3	8	
-2			-2				-2		
-1			-1				-1		
0	-4		0	19			0	1	
1			1				1		
2			2				2		
3	5		3	1			3	$\frac{1}{8}$	
4			4				4		
5			5	9			5		
6			6				6	$\frac{1}{64}$	

3. Graph the linear, quadratic and exponential equations from 2. Choose your scales appropriately



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4. Complete the following tables

Linear			Quadratic				Exponential		
$y = -8x + 20$			$y = (x - 2)(x + 4)$				$y = 2^x$		
x		1st difference	x		1st difference	2nd difference	x		ratio
-3			-3				-3		
-2			-2				-2		
-1			-1				-1		
0			0				0		
1			1				1		
2			2				2		
3			3				3		
4			4				4		
5			5				5		
6			6				6		

- What did you notice about the 1st differences for the linear equations?
- What did you notice about the 1st differences and 2nd differences of the quadratic equations?
- What did you notice about the ratio in the exponential equations and the base?

7. Graph the linear, quadratic and exponential equations from Question 3. Choose your scale appropriately.

